

Amendments to the Claims:

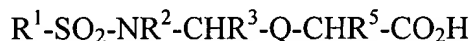
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

The following listing of claims replaces all prior versions and listings of claims in this application.

Claims 1-47 (canceled)

Claim 48 (new): A method of treating inflammatory disorders in a mammalian patient, which disorder involves binding of alpha-9 integrin to an alpha-9 integrin ligand in a mammalian patient, which method comprises administering to a mammalian subject in need thereof an effective dosage of an alpha-9 integrin antagonist compound which compound is represented by the formula:



wherein:

R^1 is selected from the group consisting of alkyl, substituted alkyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heterocyclic, substituted heterocyclic, heteroaryl and substituted heteroaryl;

R^2 is selected from the group consisting of hydrogen, alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, substituted alkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, and R^1 and R^2 together with the nitrogen atom bound to R^2 and the SO_2 group bound to R^1 can form a heterocyclic or a substituted heterocyclic group;

R^3 is selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and, when R^2 does not form a heterocyclic group with R^1 , R^2 and R^3 together with the nitrogen atom bound to R^2 and the carbon atom bound to R^3 can form a heterocyclic or a substituted heterocyclic group;

R^5 is $-(CH_2)_x-Ar-R^{5'}$ where $R^{5'}$ is selected from the group consisting of $-O-Z-NR^8R^{8'}$ and $-O-Z-R^{12}$ wherein R^8 and $R^{8'}$ are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclic, substituted heterocyclic, and where R^8 and $R^{8'}$ are joined to form a heterocyclic or substituted heterocycle, R^{12} is selected from the group consisting of heterocycle and substituted heterocycle, and Z is selected from the group consisting of $-C(O)-$ and $-SO_2-$,

Ar is aryl, heteroaryl, substituted aryl or substituted heteroaryl,

X is an integer of from 1 to 4;

Q is $-C(X)NR^7-$ wherein R^7 is selected from the group consisting of hydrogen and alkyl; and X is selected from the group consisting of oxygen and sulfur; and

pharmaceutically acceptable salts thereof.

Claim 49 (new): The method of claim 48, wherein said inflammatory condition is characterized by increased neutrophil activity.

Claim 50 (new): The method of Claim 49, wherein said alpha-9 integrin antagonist compound is selected from a group of compounds which are both alpha-4 integrin and alpha-9 integrin antagonists.

Claim 51 (new): The method of Claim 49, wherein said alpha-9 integrin antagonist is selected from the group consisting of:

N-(toluene-4-sulfonyl)-L-prolyl-L-4-(4-methylpiperazin-1-ylcarbonyloxy)phenylalanine,
N-(toluene-4-sulfonyl)-L-prolyl-L-4(N,N-dimethylcarbamyloxy)phenylalanine,
N-(1-methylpyrazole-4-sulfonyl)-L-prolyl-L-4-(N,N-dimethylcarbamyloxy)phenylalanine,
N-(toluene-4-sulfonyl)-L-(1,1-dioxo-5,5-dimethyl)thiaprolyl-L-4(N,N-dimethylcarbamyloxy)phenylalanine,
N-(toluene-4-sulfonyl)-N-methyl-L-alaninyl-L-4-(N,N-dimethylcarbamyloxy)phenylalanine,
N-(toluene-4-sulfonyl)-L-[(1,1-dioxo)thiamorpholin-3-carbonyl]-L-4-(N,N-dimethylcarbamyloxy)phenylalanine,
N-(N-*p*-toluenesulfonyl)prolyl-4-(piperazinoyloxy)phenylalanine,
N-(N-*p*-toluenesulfonyl)sarcosyl-4-(N,N-dimethylcarbamyloxy)phenylalanine,
N-(toluene-4-sulfonyl)-L-(5,5-dimethyl)thiaprolyl-L-4-[3-(N,N-dimethyl)propoxy]-phenylalanine, and
pharmaceutically acceptable salts thereof.

Claim 52 (new): The method of Claim 48, wherein the alpha-9 integrin ligand is vascular cell adhesion molecule-1 (VCAM-1).

Claim 53 (new): The method of Claim 48, wherein the alpha-9 integrin antagonist compound inhibits binding between alpha-9 integrin and an alpha-9 integrin ligand, wherein the ligand is selected from the group consisting of osteopontin, tenascin, VCAM-1, and combinations thereof.

Claim 54 (new): The method of Claim 48, wherein the inflammatory condition is selected from the group consisting of chronic asthma, smooth muscle cell proliferation in

atherosclerosis, vascular occlusion following angioplasty, fibrosis and glomerular scarring as a result of renal disease, aortic stenosis, hypertrophy of synovial membranes in rheumatoid arthritis, and inflammation and scarring that occur with the progression of ulcerative colitis, and Crohn's disease.

Claim 55 (new): A method for inhibiting binding of alpha-9 integrin to an alpha-9 integrin ligand in a mammalian subject, the method comprising administering to a mammalian subject in need thereof a pharmaceutically effective dosage of an alpha-9 integrin antagonist compound, which compound is represented by the formula:



wherein:

R^1 is selected from the group consisting of alkyl, substituted alkyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heterocyclic, substituted heterocyclic, heteroaryl and substituted heteroaryl;

R^2 is selected from the group consisting of hydrogen, alkyl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocyclic, substituted heterocyclic, substituted alkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, and R^1 and R^2 together with the nitrogen atom bound to R^2 and the SO_2 group bound to R^1 can form a heterocyclic or a substituted heterocyclic group;

R^3 is selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclic, substituted heterocyclic and, when R^2 does not form a heterocyclic group with R^1 , R^2 and R^3 together with the nitrogen atom bound to R^2 and the carbon atom bound to R^3 can form a heterocyclic or a substituted heterocyclic group;

R^5 is $-(CH_2)_x-Ar-R^{5'}$ where $R^{5'}$ is selected from the group consisting of $-O-Z-NR^8R^{8'}$ and $-O-Z-R^{12}$ wherein R^8 and $R^{8'}$ are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclic, substituted heterocyclic, and where R^8 and $R^{8'}$ are joined to form a heterocyclic or substituted heterocycle, R^{12} is selected from the group consisting of heterocycle and substituted heterocycle, and Z is selected from the group consisting of $-C(O)-$ and $-SO_2-$,

Ar is aryl, heteroaryl, substituted aryl or substituted heteroaryl,

X is an integer of from 1 to 4;

Q is $-C(X)NR^7-$ wherein R^7 is selected from the group consisting of hydrogen and alkyl; and X is selected from the group consisting of oxygen and sulfur; and

pharmaceutically acceptable salts thereof.

Claim 56 (new): The method of Claim 41, wherein the alpha-9 integrin ligand is vascular cell adhesion molecule-1 (VCAM-1).

Claim 57 (new): The method of Claim 55, wherein said alpha-9 integrin antagonist compound is selected from a group of compounds which are both alpha-4 integrin and alpha-9 integrin antagonists.

Claim 58 (new): The method of Claim 41, wherein said alpha-9 integrin antagonist is selected from the group consisting of:

N -(toluene-4-sulfonyl)- L -prolyl- L -4-(4-methylpiperazin-1-ylcarbonyloxy)phenylalanine,

N -(toluene-4-sulfonyl)- L -prolyl- L -4(N,N -dimethylcarbamyloxy)phenylalanine,

N -(1-methylpyrazole-4-sulfonyl)- L -prolyl- L -4(N,N -dimethylcarbamyloxy)phenylalanine,

N-(toluene-4-sulfonyl)-L-(1,1-dioxo-5,5-dimethyl)thiaprolyl-L-4-(N,N-dimethylcarbamyloxy)phenylalanine,

N-(toluene-4-sulfonyl)-N-methyl-L-alaninyl-L-4-(N,N-dimethylcarbamyloxy)phenylalanine,

N-(toluene-4-sulfonyl)-L-[(1,1-dioxo)thiamorpholin-3-carbonyl]-L-4-(N,N-dimethylcarbamyloxy)phenylalanine,

N-(N-*p*-toluenesulfonyl)prolyl-4-(piperazinoyloxy)phenylalanine,

N-(N-*p*-toluenesulfonyl)sarcosyl-4-(N,N-dimethylcarbamyloxy)phenylalanine,

N-(toluene-4-sulfonyl)-L-(5,5-dimethyl)thiaprolyl-L-4-[3-(N,N-dimethyl)propoxy]-phenylalanine, and

pharmaceutically acceptable salts thereof.

Claim 59 (new): The method of Claim 58, wherein said alpha-4/beta-1 integrin ligand is vascular cell adhesion molecule-1 (VCAM-1).